PSEUDO-RUBELLA.[1]

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During the last ten years of practice among infants and young children it has been the fortune of the writer to encounter, at more or less considerable intervals of time, isolated cases of a febrile eruptive malady of infancy which have so closely resembled each other in general characteristics as to suggest the definite symptom-complex of a mild infection resembling, but apparently differing from, rubella in several important features.

This pseudo-rubella, as it may be called for the present, seems to be confined to infants between the age of eight or ten months and twenty months to two years, and in every instance observed has occurred in private practice in children who have in the majority of the cases had older brothers and sisters to whom a disease of the contagious character of rubella could easily have been communicated. In not one of the 10 cases observed has the attack been preceded by a similar affection or by rubella in the other children of the family, nor has any instance of communication of the disease or of rubella to other children been observed. The resemblance to a mild rubella has been so striking that this diagnosis always has been most carefully considered, and in each case efforts were made to trace possible exposures to this contagion but without success. While this failure is not remarkable, the absence of communication of a similar disease or of rubella is certainly noteworthy.

These cases have always been observed singly and unexpectedly, never during the prevalence of an epidemic of rubella, and have recovered so promptly that little opportunity has been offered for exhaustive study other than careful noting of the clinical features; and it is therefore with the hope that others may have wider opportunity of observation that the writer ventures to present this purely clinical paper.

The characteristics of rubella are well known. Most writers speak positively of the absence or short duration of prodromal symptoms; of the usually slight degree of fever, which may range, however, from normal to 103° or 104° F. and of the prompt appearance of the rash, frequently the first distinct evidence of the disease. D. J. M. Miller[2] has called attention to the fact that a febrile pre-eruptive stage lasting three or four days or even up to six or seven days might occur, with prompt fall of temperature after the eruption appeared, and this has been confirmed by others, including the writer; but, as these cases certainly are exceptional, it would seem more reasonable to attribute them to a delayed appearance of the rash, rather than to a prolonged prodromal stage.

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[1] Read before the American Pediatric Society, Washington, May 10, 1916, and not previously published.

[2] Archives of Pediatrics, January, 1905.

The eruption of rubella appears as small, round, rosy-red macules or maculopapules, first behind the ears, on the scalp and face, and thence spreads rapidly downward over the body; the spots become larger and in some areas coalesce to form patches of the so-called "bat-wing" pattern. The enlargement of the postauricular and postcervical lymph glands, and frequently of the axillary and inguinal groups, and occasionally of isolated glands over the abdomen and chest, is one of the most distinctive features of rubella. Desquamation is very variable, sometimes is entirely wanting; but usually can be detected by close observation in the form of fine powdery scales.

The onset of pseudo-rubella is abrupt. The infant, previously in perfect health, is found usually toward evening to be feverish, fretful, may refuse his bottle, or may even vomit once or twice. The temperature is elevated, 102° or 103°. If seen at this time, examination shows normal fauces, a clean or only slightly frosted tongue, with a normal or only slightly feverish odor to the breath. The pulse is somewhat accelerated, in keeping with the rise of temperature, but of good quality and not suggestive, while the heart sounds are clear. The lungs are negative; there is no cough nor coryza, no lacrymation nor conjunctival irritation, no abdominal symptoms; the last stool of perfectly normal color and consistency. The spleen and the liver are not enlarged. The external ears and surrounding tissues are not tender to touch, and the speculum shows perfectly normal drumheads. Under these conditions a positive diagnosis is impossible. The possibility of a latent intestinal disturbance, however, will prompt the administration of a laxative like castor oil, with the result on the following day of a good clearing out of the bowel showing normal intestinal contents modified only by the changes resulting from the hasty clearing out of milk feces that have not had time for complete digestion—a normal castor oil stool. On the second day the febrile elevation continues, 101° to 102° in the morning. Physical examination yields nothing new except the observation that the postcervical chains of lymph nodes are palpable and seem to be slightly tender. The postauricular glands are not affected, but in some of the cases the inguinal nodes have been found slightly enlarged. The axillary glands have not been involved.

The evening temperature is fairly high—103° to 104°, but the baby usually takes food better and is grateful for water. The diagnosis, except for a possible mild rubella, seems no clearer than at first. The third day is very much a repetition of the second, the morning temperature usually somewhat lower, averaging about

101°, while the evening temperature may reach 104° and over, but no more conclusive symptoms have made their appearance, except for the possibly greater prominence of the lymph nodes.

The urinary examination shows no abnormality. The pulse is still elevated, but the baby seems brighter despite his fever, and shows no signs of toxicity. There have been no changes in the mouth or fauces, no enanthem, and no abnormal physical signs in the rest of the body.

The diagnosis is therefore still in doubt; and prompted by the enlarged postcervical glands, one is tempted to speak of rubella and to look for a rash without success. The fourth day still shows fever about 102° in the morning, with no new symptoms; but toward evening, with the temperature usually not so high as on the preceding evening, a few discrete pale reddish macules, about the size of the head of a pin, may be observed variously about the neck, on the face, under the ears or above the clavicles.

On the fifth day the temperature is about 101°, the rash has come out rapidly since the evening before and covers more or less thickly the face, neck, chest and shoulders, and is spreading downward. It is more discrete than a typical rubella rash, not raised above the surface but in some areas on the face has grouped or coalesced into roundish patches of the size of a very small coin. This tendency to coalescence is also noticed about the loins and in some cases about the thighs. The arms and legs are but sparsely invaded, and the palms and soles are usually spared. The color is pale pinkish, even slightly violaceous. The temperature keeps falling, often to below 100° by evening, and the pulse comes down. The baby is brighter, takes his bottle better and passes a good night.

The following day the temperature and pulse are practically normal. The rash is still present, but looks less intense. The enlarged glands are noticeably smaller and less sensitive. There have been no catarrhal symptoms, no changes in the stools. Except for the rapidly fading rash and still enlarged glands, the baby is well. An occasional transient concentration of the urine, and exceptionally a passing trace of albumin without casts have been noted, but the urine has always cleared up rapidly.

In a day or two the rash has disappeared, leaving phantom traces of discoloration for a few days. The glands have been reduced to almost impalpable size and soon cease to be noticeable. No desquamation has been observed in any case.

The resemblance to rubella is therefore quite striking, especially in the characteristic appearance of the rash, the enlargement of the postcervical glands and the febrile course; but there are a number of points of difference which must be carefully weighed.

Contagion.—Rubella is decidedly contagious, prevailing in epidemics and rarely seen sporadically. It is also generally accepted that second attacks are exceedingly rare. None of the infants of the series here reported, all of whom were of well-to-do families, had been known to have been exposed to rubella, nor did any of the cases occur during or shortly before or after an epidemic prevalence of this disease. While susceptible children in the same household have in a majority of the cases been in contact with the patient before the appearance of the rash, and even during the whole course of the illness, no instance of a secondary case has occurred either in the same family or among other possible contacts. The cases have occurred sporadically, usually widely separated in time, most of them in Philadelphia, two of them at an interval of a month during the same summer at Cape May, N. J., these latter, however, in two families unacquainted and not living near each other.

Only one of the infants of this series, who had had "pseudo-rubella" at the age of two years, is known to have had an attack of rubella subsequently, at the age of nine years; but, for the other cases, it may be pointed out, the more rigid rules of the Board of Health of Philadelphia, which now quarantines rubella equally with true measles, may well account for an escape from rubellous infection up to the present time.

Age.—The general consensus of opinion, gleaned from an exhaustive study by Griffith[3] in 1887, seems to be that rubella occurs especially between the ages of five and fifteen years, though it has been seen in children under two years (Griffith), and Scholl[4] reported a case in an infant a few days after birth, the mother having had the disease two months before her confinement. All the children in the series here reported were under two years of age.

Invasion.—Many of the cases of rubella collected by Griffith in the monograph already quoted showed no prodromes at all. In a large number, however, slight symptoms were observable for not more than twelve hours before the rash made its appearance. His conclusions, from a comparison of numerous published reports, are that the symptoms in a normal case are malaise, often slight cough, suffusion of the eyes with some lacrymation, probably some coryza, sometimes pain in the limbs, drowsiness, at times hoarseness, sore throat often, enlargement of the glands at the back of the neck and behind the ears, possibly an elevation of temperature of 1° or 2°, occasionally nausea, and some edema of the face.

In the series forming the basis of this study the invasion has lasted invariably three full days or somewhat longer from the onset of fever to the first appearance of the rash and the rapid decline of temperature. There has been no cough, no suffusion or congestion of the conjunctivæ, no coryza or other catarrhal symptoms, no angina, no enanthem.

Eruption.—While the rash of rubella is rose-tinted in color, of a distinctly brighter hue than the darker red of true measles, the enanthem in the cases of this series was paler, less rosy and even in several instances with a slightly violaceous tint. It was less liable to coalesce into larger areas especially where folds of the cutaneous surfaces occur, and was therefore more discrete, and spread more slowly to lower parts of the body. It had little or no elevation above the surface, and in no case presented an appearance simulating that of the scarlatiniform type of rubella.

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[3] Medical Record, July 2 and 9, 1887.

[4] Trans. Med. Assoc., Alabama, 1881, p. 528.

Allowing for the long intervals of time between the individual cases observed, it has seemed that the rash has faded more rapidly and has left less pigmentation than does rubella. Desquamation has been observed in none of the cases.

Symptoms of the Eruptive Stage.—The absence of angina and enanthem and of the catarrhal symptoms so frequently found in rubella leaves the eruption and the adenitis as the only features of the eruptive stage, since the fall of temperature is very prompt as soon as the rash appears; while in rubella fever is usually an important symptom of the eruptive stage and in a considerable number of cases an elevation of from 99.5° to 100° has continued for a week after the rash has entirely vanished.

Tenderness and enlargement of the lymph nodes, while invariably found in all the cases of this series, was never so widespread or so marked as in rubella or in "the fourth disease," as described by Dukes, who states that the enlargement is universal in both diseases. In the pseudo-rubella cases enlargement was chiefly confined to the postcervical chains; but it is important to emphasize that enlargement and tenderness were present very early in the prodromal stage and rapidly subsided as soon as the eruption appeared.

The Fourth Disease.—From the "fourth disease" of Dukes pseudo-rubella is distinguished by its long prodromal period as compared with that of a few hours (Dukes), by the slower progress of the eruption, by the characteristics of the rash, the absence of throat symptoms and its marked difference in general appearance from scarlet fever, which the "fourth disease" is considered to resemble so closely as to cause frequent confusion of diagnosis; and, finally, by its apparent lack of contagiousness and the absence of desquamation, both of which features are marked in the "fourth disease."

It is therefore evident that enlargement of postcervical lymph glands, fever, and a rash are the only symptoms common to true rubella, pseudo-rubella and the "fourth disease," and that while a diagnosis of rubella would have been the most natural one to make in the cases here reported, sufficiently sharp distinctions have been noted in the clinical picture to warrant the suggestion that they were not rubella, and certainly not the so-called "fourth disease."

The conclusion therefore seems reasonable that this symptom-complex constitutes a hitherto undescribed mild infection, non-contagious, or only feebly contagious, to which young infants are peculiarly susceptible and older children not at all or only rarely liable.

If, as the writer believes, these cases are not true or modified rubella, it is important that the existence of a pseudo-rubellous affection of young infants should be recognized, and by reason of its non-contagiousness should not be subjected to the quarantine that properly is enforced by health authorities against true rubella.

CLASSIFICATION OF RALES: A PLEA FOR SIMPLIFICATION.

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The writer has taught physical diagnosis for many years. He is impressed with the difficulties encountered in teaching students to identify the adventitious sounds heard in auscultation, commonly called *rales*. He has examined most of the text-books in use in the leading American universities and finds an astounding divergence in the matter of nomenclature. The variation, so far as the student is concerned, depends to a very great extent on the early educational environment of his teachers or of those who have written the text-books that are put into his hands for study.

It is quite desirable that the student come into contact with men who have themselves been taught in different schools. This gives the student a little broader grasp of his subject than he would get otherwise. However in respect to this part of the nomenclature of physical diagnosis the difference in teachers may bring confusion to the student.

Seldom do we find two authors whose classification is the same. Every writer has apparently been conscious of the difficulty and has tried to make a classification which will clarify the situation. They have all failed to do this. My own effort may meet with the same failure, but if calling attention to the difficulty may result in some sort of coördinated effort to remove obstacles for the medical student I shall be content.

He may be spared the supreme memory effort of mastering such a list as the following, taken from the authors I have had at hand: Dry, moist, sonorous, sibilant, mucous, submucous, crepitant, subcrepitant, wheezing, whooping, mucous click, crowing, whistling, piping, squeaking, hissing, humming, high-pitched crackling, bubbling, small bubbling, gurgling, snapping, musical, coarse, fine, resonant, non-resonant, consonating, non-consonating, flapping, cardiopneumatic, laryngeal, tracheal, cavernous, euphonic, pleural, vesicular, latent, crumpling, crackling, metallic groaning, hollow, metallic tinkling (*Gutta cadens*), bronchopulmonary, fistula rale, crepitous, indeterminate, frémissement cataire, Hippocratic succussion.

Our first classification came from Laennec, as we all are aware, and it is today superior to the classifications found in most of the text-books. He did not use the word *rale* but the French word *rhonchus*. I quote from the translation by Forbes[1]—Rhonchi (rales).

1. Moist crepitus rhonchus or crepitation (very large).
2. Mucous rhonchus or *gurgling* (large, middling, small).
3. Dry, sonorous rhonchus or snoring.
4. Dry, sibilous rhonchus or whistling.
5. Dry, crepitous rhonchus, with large bubbles or crackling.

Those who came after Laennec in their effort to supplement and clarify the work of the master have gone further and produced the almost Rabalaisian collection I have mentioned above.

Professor G. Andral in his notes on the fourth and latest French edition of Laennec has the following to say regarding rhonchi (rales): "Since Laennec hardly anything has been added to the excellent description given by him of the different rhonchi." Surely it is commendable that study of such an important contribution should go on, that a form should be determined and some sort of agreement reached as to terminology to which we shall all agree. It is within the province of constituted medical associations to aid in clarifying matters of this kind.

It would seem important that medical men who speak the English tongue adopt a standard terminology.

The diagnostic value of the signs and the importance of their differentiation are not to be gainsaid. Who will deny that the determination of a different type of rale speaks for a difference in pathology? Yet how frequent is it that we read in medical papers, "Rales were found at the base?" The authors who write thus evidently are choosing words which all understand and prefer not to enter a discussion as to classification. Perhaps they are wise.

In a survey of the literature we find two tendencies. One school, among which that of Austin Flint[2] stands out conspicuously, has attempted to establish a nomenclature based on anatomical considerations. Austin Flint's classification is as follows: Laryngeal and tracheal rales; bronchial rales; vesicular rales; cavernous rales; pleural rales; indeterminate rales.

Flint uses the term "so-called" as applied to the *subcrepitant* rale in the chapter on classification of rales and attributes great diagnostic importance to this rale. One gets the impression that he accepts the term against his will. Indeed, his idea in departing

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[1] A Treatise on the Diseases of the Chest and on Mediate Auscultation, by R. T. H. Laennec, M.D., 3d French edition. Trans. by John Forbes. Samuel S. and Wm. Wood, 1838.

[2] Auscultation and Percussion, 6th edition. Lea & Febiger, 1912.